

Application No. 09/689,010
Amendment dated May 18, 2007
Reply to Office Action of January 18, 2007

REMARKS

Status Of Application

Claims 1-5 and 8-33 are pending in the application; the status of the claims is as follows:

Claims 9-29 are withdrawn from consideration.

Claims 1-5, 8, and 30-33 are rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement.

Claim 1 and 30 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,176,990 B1 to Yager et al. ("Yager").

Claims 1, 8, 30, and 31 are rejected under 35 U.S.C. § 103(a) as being unpatentable over PCT Publication No. WO 98/28604 to Fuhr ("Fuhr") in view of PCT Publication No. WO 96/13744 to Günther ("Gunther").

Claims 32 and 33 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Fuhr and Gunther as applied to claim 31 above, and further in view of U.S. Patent No. 4,908,112 to Pace ("Pace").

Claims 2-4 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Yager in view of U.S. Patent No. 5,876,675 to Kennedy ("Kennedy").

Claims 2-4 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Yager in view of U.S. Patent No. 5,599,503 to Manz et al. ("Manz") and U.S. Patent No. 5,296,375 to Kricka et al. ("Kricka").

Claim 5 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Yager in view of either U.S. Patent No. 6,091,502 to Weigl et al. ("Weigl") or *Three DNA Sequencing*

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Methods Using Capillary Gel Electrophoresis and Laser-Induced Fluorescence, by Swerdlow et al. ("Swerdlow").

Claim 8 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Yager in view of Manz.

Claim Amendments

Claims 1-30 have been canceled.

Claims 31 and 32 have been amended. These changes do not introduce any new matter.

35 U.S.C. § 112 Rejection

The rejection of claims 31-33 under the first paragraph of 35 U.S.C. § 112 as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention, is respectfully traversed based on the following.

Claim 31 is rejected for its limitation that requires the "second electrode [be] provided on a lower surface of said channel in a position at least partially opposite said first electrode." Claim 31, as amended, no longer recites this limitation. Claims 32 and 33 depend from claim 31, and thus also no longer contain this limitation.

Accordingly, it is respectfully requested that the rejection of claims 31-33 under the first paragraph of 35 U.S.C. § 112 as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention, be reconsidered and withdrawn.

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35 U.S.C. § 103(a) Rejections

The rejection of claim 31 under 35 U.S.C. § 103(a), as being unpatentable over Fuhr in view of Gunther, is respectfully traversed based on the following.

Claim 31 discloses a microchip that has, in part,

"a channel having at least one internal surface, a substantially trapezoidal-shaped cross-section, and the channel having an upper surface thereof that is longer than a lower surface thereof, wherein an object to be analyzed is capable of traveling through the channel;

an optical element facing the channel to receive light from the object, the optical element having a surface forming a part of the at least one internal surface of the channel; and

a light guide for guiding a light from an external light source to a prescribed area of the channel, a light-emitting surface of the light guide being a portion of a first side surface of the channel, wherein the first side surface of the channel is adapted to concentrate the light emitted from the light guide to the side of the channel facing the optical element:" (emphasis added)

Fuhr discloses a microchip comprising a channel that has internal surfaces wherein analyzed objects travel through the channel. Fuhr does not disclose an optical element or a channel having a substantially trapezoidal-shaped cross-section.

The Office Action asserts that Günther discloses a detection system wherein an optical element that receives light from analyzed objects forms a portion of the internal surface of the channel. (Office Action page 6). The Office Action also asserts that Günther shows a lens disposed between the end of the waveguide and that the lens is optional within the device (Office Action, page 7). However, Günther does not disclose a detection system having a channel that has a trapezoidal-shaped cross-section and a light guide having a first side surface adapted to concentrate the light emitted from the light guide to the side of the channel facing the optical element.

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These disclosed limitations of claim 31 allow for high-precision detection with a simple detection system. Because of the shape of the channel, the light emitted from the light-emitting surface of the light guide generates a refractive action at the light-emitting surface, whereby the excited light is radiated towards the bottom surface side of the channel. The excited light is radiated in concentration to the light-taking surface of the optical element. (Specification, page 14, lines 15-24). Neither Fuhr nor Günther, alone or in combination, teach or suggest such limitations as is disclosed in claim 31.

Accordingly, it is respectfully requested that the rejection of claim 31 under 35 U.S.C. § 103(a) as being unpatentable over Fuhr in view of Günther, be reconsidered and withdrawn.

The rejection of claims 32 and 33 under 35 U.S.C. § 103(a), as being unpatentable over Fuhr and Gunther as applied to claim 31 above, and further in view of Pace, is respectfully traversed based on the following.

Claims 32 and 33 are dependent upon claim 31. Claim 31 requires, in part, "a light guide for guiding a light from an external light source to a prescribed area of the channel, a light-emitting surface of the light guide being a portion of a first side surface of the channel, wherein the first side surface of the channel is adapted to concentrate the light emitted from the light guide to the side of the channel facing the optical element;"

As discussed above, neither Fuhr or Günther disclose this limitation of claim 31. Pace discloses an analytical separation device having a trapezoidal shaped channel and a light guide surface having a slope similar to the side wall of the channel. However, Pace does not disclose a light guide adapted to concentrate the light emitted to the side of the channel facing an optical element. Neither Fuhr, Günther, nor Pace, by themselves or in combination, teach or suggest such a limitation.

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Accordingly, it is respectfully requested that the rejection of claims 32 and 33 under 35 U.S.C. § 103(a) as being unpatentable over Fuhr and Gunther as applied to claim 31 above, and further in view of Pace, be reconsidered and withdrawn.

CONCLUSION

Wherefore, in view of the foregoing amendments and remarks, this application is considered to be in condition for allowance, and an early reconsideration and a Notice of Allowance are earnestly solicited.

This Amendment does not increase the number of independent claims, does not increase the total number of claims, and does not present any multiple dependency claims. Accordingly, no fee based on the number or type of claims is currently due. However, if a fee, other than the issue fee, is due, please charge this fee to Sidley Austin LLP Deposit Account No. 18-1260.

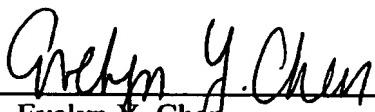
If an extension of time is required to enable this document to be timely filed and there is no separate Petition for Extension of Time filed herewith, this document is to be construed as also constituting a Petition for Extension of Time Under 37 C.F.R. § 1.136(a) for a period of time sufficient to enable this document to be timely filed.

Any other fee required for such Petition for Extension of Time and any other fee required by this document pursuant to 37 C.F.R. §§ 1.16 and 1.17, other than the issue fee,

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and not submitted herewith should be charged to Sidley Austin LLP Deposit Account No. 18-1260. Any refund should be credited to the same account.

Respectfully submitted,

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